

Information Literacy in the Knowledge Society: Empowering Learners for a Better Tomorrow

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Abstract

We are finding ourselves in a rapidly growing and complex digital environment which has in turn increased our dependency on information. But there is increasing evidence that our information skills are not keeping pace in any systematic fashion. We all need help to sharpen the techniques and skills to manage information. Present paper is an attempt to present the current status of information literacy and the emerging roles of libraries and schools of LIS education in augmenting the information literacy campaign.

Keywords: Information Literacy (IL), IL Models, IL Standards

Introduction:

Information literacy (IL) has been known by many different names: library orientation; bibliographic instruction; user education; information skills training. These forms of IL are closely related to each other. While library orientation concentrates on how to use a physical building and bibliographic instruction and user education on the mechanics of using particular resources. Information skills training and information literacy concentrates on cognitive and transferable skills, such as problem solving, evaluation and communication skills. Information Literacy or IL deals with the ability to access, evaluate, organize and use information in order to learn, problem-solve, make decisions in formal and informal learning contexts, at work, at home and in educational settings. IL is becoming a strong pillar of knowledge society.

Definitions of IL

There are many definitions of Information Literacy:

- *CILIP* have defined [information literacy](#) as "Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner." They have also created more in depth [guidance](#) on the skills required to be information literate.
- The most commonly cited and used IL definition is the one adopted by the American Library Association (ALA), 1998: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. The information literate individuals are those who have learned how to learn"
- *The Society of College, National and University Libraries* (SCONUL) developed the [Seven Pillars of Information Literacy](#) model in 1999. It was designed to be a practical working model that would help develop ideas amongst practitioners and generate discussion. It was updated in 2004. SCONUL's position paper on [Information Skills for Higher Education](#) outlines the reasons for the development of the model.
- *The Joint Information Services Committee* (JISC) uses the term i-skills to describe information literacy and IT skills. [i-Skills](#) are defined as: "the ability to identify, assess, retrieve, evaluate, adapt, organise and communicate information within an iterative context of review and reflection
- *The Association of College & Research Libraries* (ACRL) defines information literacy as: "the set of skills needed to find, retrieve, analyze, and use information." The ACRL has created a set of [standards](#) that outline in detail the skill set needed to be information literate. The website also provides guidance on collaboration, curriculum design and pedagogy.
- *The Australian and New Zealand Institute for Information Literacy* (ANZIIL) have developed an information literacy [framework](#) that outlines what makes an information literate citizen.
- [Prague declaration](#) of 2003 defines Information Literacy as "encompasses knowledge

of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of life long learning."

- *The [Alexandria proclamation](#)* of 2005 on Information Literacy and Lifelong Learning proclaims that Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.”
- *The Illinois Mathematics and Science Academy* define "Digital Information Fluency (DIF) as the ability to find, evaluate and use digital information effectively, efficiently and ethically."

Data Smog and Information Literacy:

Data Smog is a term coined by author David Shenk. It refers to the idea that too much information can create a barrier in our lives. This data smog is produced by the huge amount of information, the speed at which it comes to us from all directions, the need to make fast decisions, and the feeling of anxiety that we are making decisions without having all the information that is available or that we need. Information literacy is the solution to Data Smog. It allows us to cope by giving us the skills to know when we need information and where to locate it effectively and efficiently. It includes the technological skills needed to use the modern library as a gateway to information. It enables us to analyze and evaluate the information we find, thus giving us confidence in using that information to make a decision or create a product. Information literacy equips them with the critical skills necessary to become independent lifelong learners. We are wrong when we presume that learners are getting enough IL skills and they are capable enough to face the challenges posed by data smog. To give them a strong foundation of IL skills a parallel curriculum in IL is must at all levels of education, from primary to tertiary. As the American Library Association Presidential Committee on Information Literacy (January 10, 1989, Washington, D.C.) says “Ultimately, information literate people are those *who have learned how to learn*. They know how to learn because they know how knowledge is organized, how to find information, and

how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand.” Organizations, specially educational organizations have numerous benefits, direct or indirect by implementing IL programme. The benefits are summarized below:

Benefits:

Human Resource:

- Greater independence leading to self sufficiency.
- Improved access/connection to information to aid the process of research
- Enhanced professional development in the area of research and information skills
- Time saving
- Improved quality of information outputs
- More effective sharing of Information

Organizations:

- More effective use of information across the institution
 - Duplication reduced
 - Improved information flow
 - Improved use of existing resources
 - Improved return on investment
- Improved research capability
- Better take-up and integration of resources into e-learning and e-research environments
- Enhanced market profile and reputation
- Motivated staff

Students:

- Enhanced employability
 - Transferability of information skills to work-based context
- Improved research skills
 - Ability to retrieve information and interpret it using a variety of media and output formats
- Improved confidence and ability to learn independently

- Increased ability to think critically, interpret information and make informed judgments

Libraries:

The right information to the right person at the right time is the key to success for any organization. An IL practicing library can successfully enable easy access to information resources in all formats while taking responsibility for its currency and relevance, identify and acquire the materials of most relevance, organize those materials in an easily accessible manner, train readers to access and exploit relevant information resources in the most effective way and take the lead in raising the levels of information literacy within the organization. Information literacy skills allow library and information professionals to create, develop and manage a library or information unit which meets the specific information needs of their organization.

Information Literacy Components:

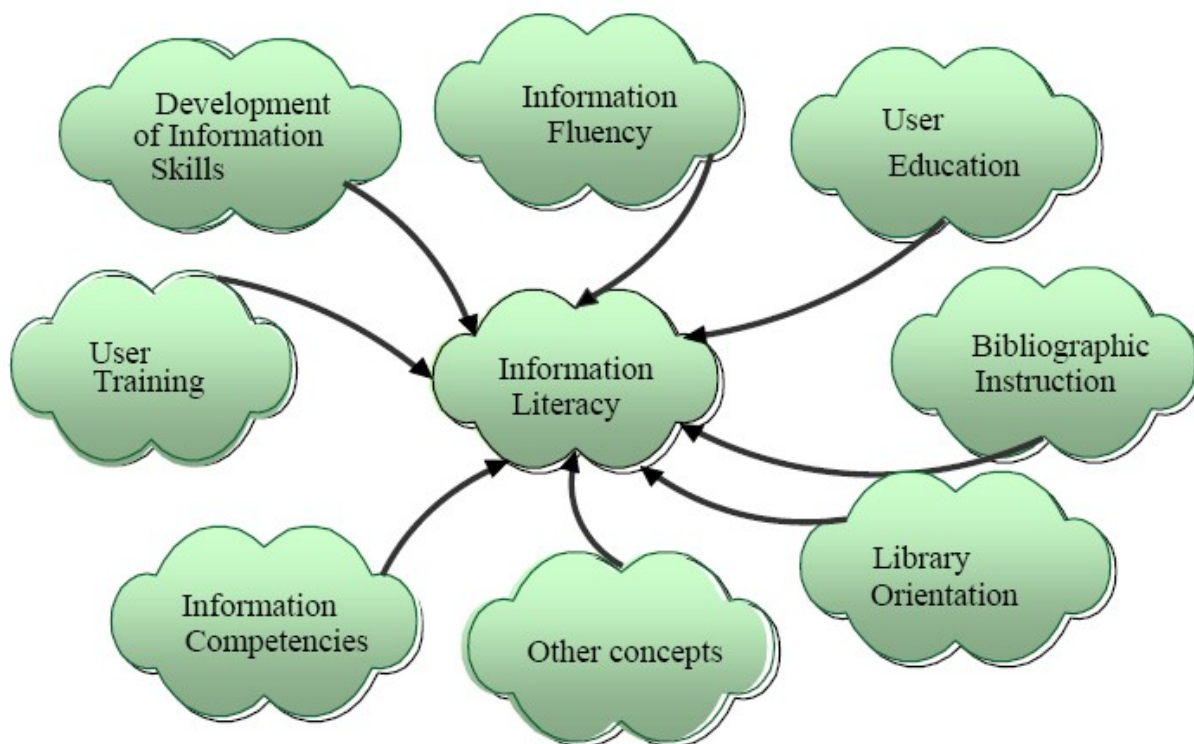
The components of Information Literacy are:

Basic Literacy:

Reading & Writing, Speaking & Listening, Counting & Calculating, Perception & Drawing

Library Literacy:

Library Literacy is too important to be left to chance. Every student needs to understand the difference between fiction and non-fiction. Every student needs to know how to effectively use reference books and periodicals, both print and online. Students need to understand the Dewey Decimal System as a useful, logical system of hierarchical organization and recognize its similarities to other such systems. Students should use indexes, the library catalogue and the WebOPAC so often it becomes a subconscious skill.



Mass Media Literacy:

Media Literacy includes an understanding of the many different types of media and the purposes for which they can be used. Students should be taught the difference between fact and opinion, and be able to distinguish between information, entertainment, and persuasion. They should learn that all information has a source and that knowing the source, and its biases, is an important part of understanding any information. Educators talk about “higher order thinking” and about helping students become “more critical thinkers.”

ICT Literacy:

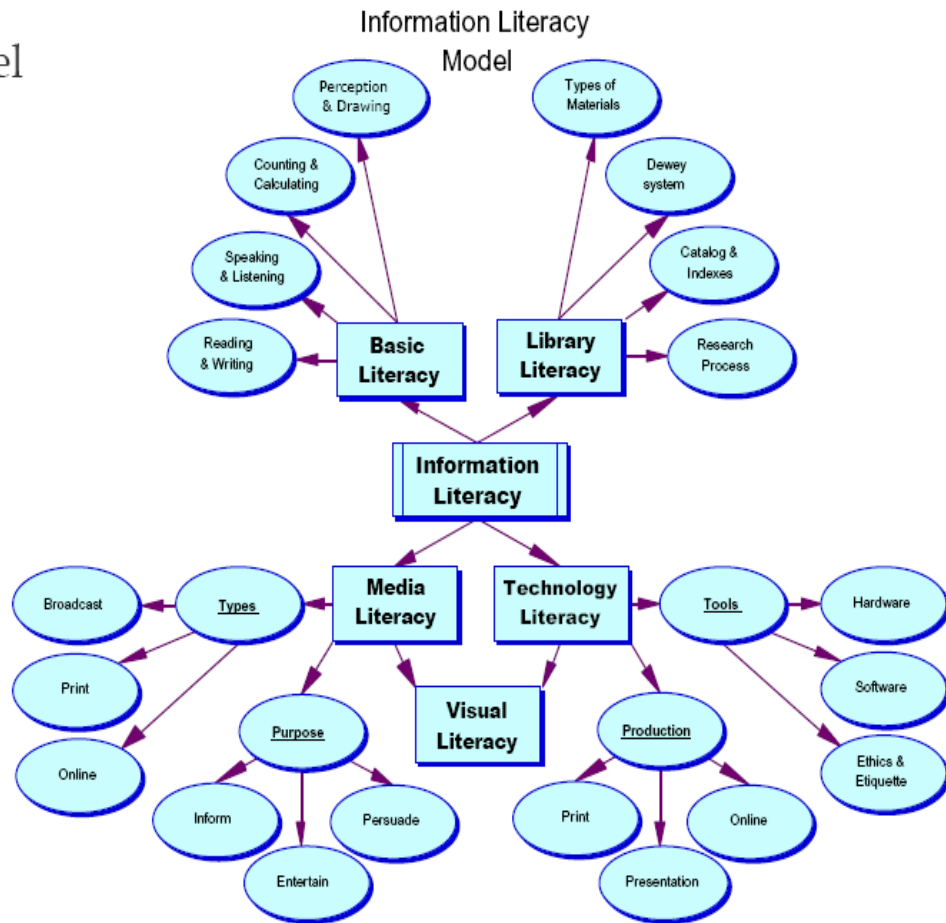
The knowledge and skills necessary to understand information and communication technologies (ICTs), including the hardware, the software, systems, networks (both local area networks and the Internet), and all of the other components of computer and telecommunications systems.

Media Literacy:

The knowledge and skills necessary to understand all of the mediums and formats in which data, information and knowledge are created, stored, communicated, and presented,

i.e., print newspapers and journals, magazines, radio, television broadcasts, cable, CD-ROM, DVD, mobile telephones, PDF text formats, and JPEG format for photos and graphics.

The Model



Technology Literacy:

Like basic literacy, technology literacy is a continuum of skills that can always be improved, and, like library literacy, students receive technology experience and instruction in a hit or miss fashion depending on which teachers they may have over the years. Every student deserves a wide range of educational experiences with various types of hardware and software. Every student should be thoroughly grounded in both the ethics and etiquette of technology use. Most importantly, every student should have frequent opportunities to use technological tools to create their own information artifacts — print as well as online.

Visual Literacy:

According to Brian Stonehill, Pomona College, Clairmont, California, “Visual

Literacy means the skills and learning needed to view visual and audio/visual materials skeptically, critically, and knowledgeably.” -- Visual Literacy is the link between Media Literacy and Technology Literacy. Media images and sound are end products created using the tools of digital technology.

Tool literacy:

The ability to understand and use the practical and conceptual tools of current information technology relevant to education and the areas of work and professional life that the individual expects to inhabit.

Resource literacy:

The ability to understand the form, format, location and access methods of information resources, especially daily expanding networked information resources.

Social-structural literacy:

Knowing that and how information is socially situated and produced.

Research literacy:

The ability to understand and use the IT-based tools relevant to the work of today's researcher and scholar.

Publishing literacy:

The ability to format and publish research and ideas electronically, in textual and multimedia forms (including via World Wide Web, electronic mail and distribution lists, and CD-ROMs).

Emerging technology literacy:

The ability to adapt, understand, evaluate and make use of the continually emerging innovations in information technology so as not to be a prisoner of prior tools and resources, and to make intelligent decisions about the adoption of new ones.

Critical literacy:

The ability to evaluate critically the intellectual, human and social strengths and weaknesses, potentials and limits, benefits and costs of information technologies.

Information Literacy Models

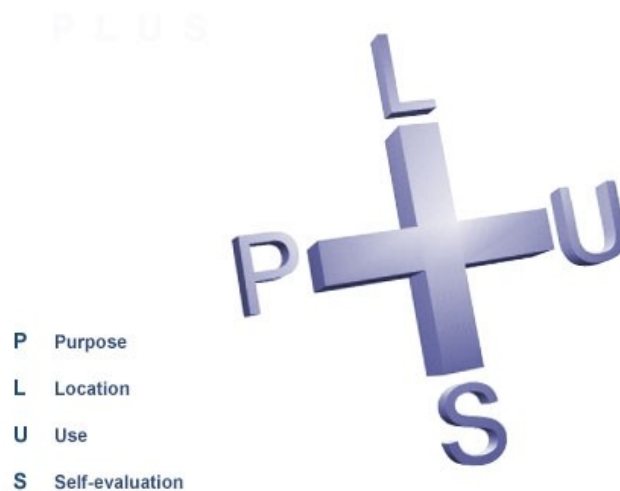
1. **Big6:** (An Information Problem-solving Process)

Developed by Mike Eisenberg, Professor of Information Science at Syracuse University and Bob Berkowitz, a practicing library media professional in Syracuse, New York. One of the most well known models in the field and is being taught widely to students as a guide for their research, especially at the K- 12 level. The Big 6 steps include: task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation.



2. **PLUS Information Skills Model**

This model is developed by James Herring. PLUS is an acronym that both pupils and teachers will find easy to remember. It breaks information skills into four main parts, as shown in the box below.



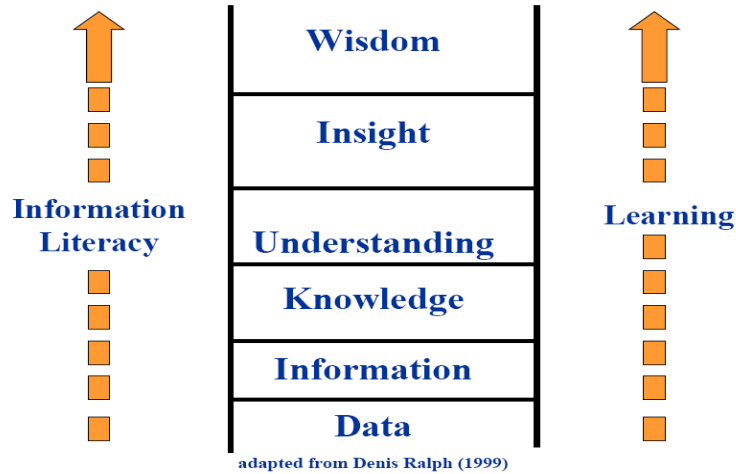
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|----------|------------------------|--|
| P | <u>Purpose</u> | Identifying the purpose of an investigation or assignment |
| L | <u>Location</u> | Finding relevant information sources related to the purpose |
| U | <u>Use</u> | Selecting and rejecting information and ideas, reading for information, note-taking and presentation |
| S | <u>Self-evaluation</u> | How pupils evaluate their performance in applying information |

skills to the assignment and what they learn for the future

3. Seven Faces of Information Literacy (Christine Bruce)

| | | |
|-------------|---|---|
| First Face | The IT Experience Information | <ul style="list-style-type: none"> ■ IT used for information awareness ■ IT helps users stay informed/communicate ■ a social experience –not individual ■ dependent on expertise within a group |
| Second Face | Info Sources Experience | <ul style="list-style-type: none"> ■ bibliographic ■ human ■ organisational ■ assistance of intermediaries emphasised ■ Personal skills also valued |
| Third Face | The Info Process Experience | <ul style="list-style-type: none"> ■ linked to problem-solving, decision-making ■ requires personal heuristics ■ a ‘creative art’ |
| Fourth Face | The Info-Control Experience | <ul style="list-style-type: none"> ■ recognizing relevant information ■ managing that information ■ making connections between information, projects, people ■ interconnectedness between information and parts of projects |
| Fifth Face | The Knowledge Construction Experience | <ul style="list-style-type: none"> ■ emphasis on learning ■ Developing a personal perspective with knowledge gained ■ dependent on critical thinking |
| Sixth Face | The Knowledge Extension Experience | <ul style="list-style-type: none"> ■ personal knowledge + experience + creative insight/intuition ■ mysterious experience ■ develops new knowledge/approaches to tasks/novel solutions |

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| Seventh Face | The Wisdom Experience | <ul style="list-style-type: none"> ■ personal quality ■ values and ethics combined with knowledge ■ information used for the benefit of others |
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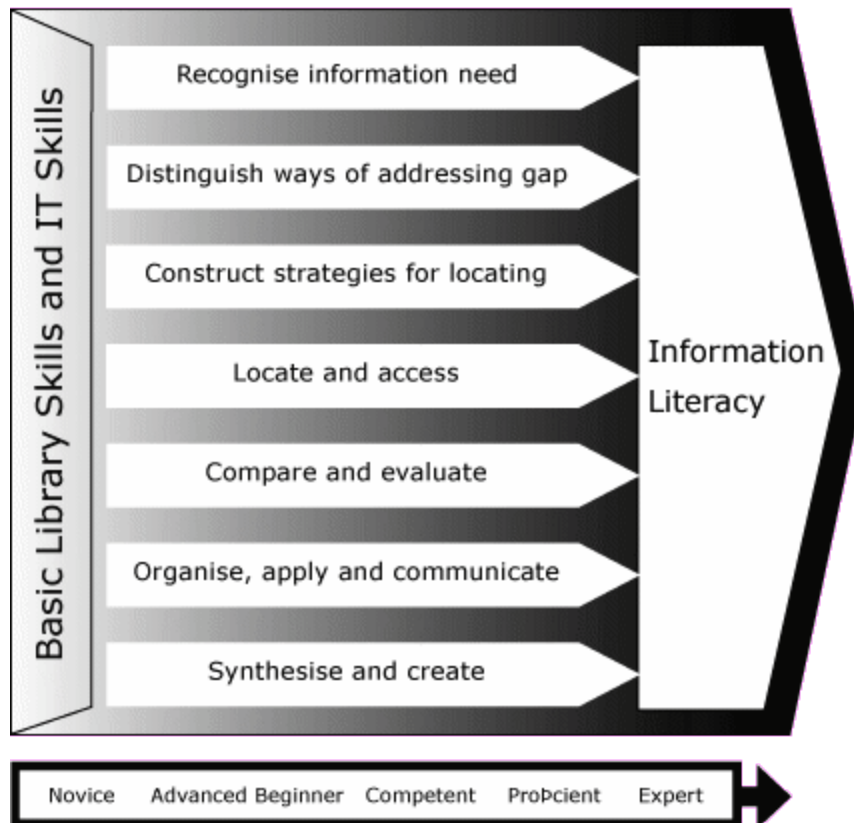
4. The Information Skills Model (Seven Pillar Model)

1. The ability to recognize a need for information
2. The ability to distinguish ways in which the information ‘gap’ may be addressed
 - knowledge of appropriate kinds of resources, both print and non-print
 - selection of resources with ‘best fit’ for task at hand
 - the ability to understand the issues affecting accessibility of sources
3. The ability to construct strategies for locating information
 - to articulate information need to match against resources
 - to develop a systematic method appropriate for the need
 - to understand the principles of construction and generation of databases
4. The ability to locate and access information
 - to develop appropriate searching techniques (e.g. use of Boolean)
 - to use communication and information technologies, including terms international academic networks

- to use appropriate indexing and abstracting services, citation indexes and databases
 - to use current awareness methods to keep up to date
5. The ability to compare and evaluate information obtained from different sources
- awareness of bias and authority issues
 - awareness of the peer review process of scholarly publishing
 - appropriate extraction of information matching the information need
6. The ability to organise, apply and communicate information to others in ways appropriate
- to the situation
 - to cite bibliographic references in project reports and theses
 - to construct a personal bibliographic system
 - to apply information to the problem at hand
 - to communicate effectively using appropriate medium
 - to understand issues of copyright and plagiarism
7. The ability to synthesise and build upon existing information, contributing to the creation of new knowledge

SCONUL Seven Pillars Model for Information Literacy

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The information skills model attempts to show diagrammatically the relationships between the 'competent information user' at the base level (strand (a) above), and the much more advanced idea of information literacy. The 'pillars' show an iterative process whereby information users progress through competency to expertise by practising the skills. Only those at the higher end will be practising the seventh skill level.

5. The i-skills cycle (JISC):

JISC has defined i-skills as : the ability to identify, assess, retrieve, evaluate, adapt, organise and communicate information within an iterative context of review and reflection. According to JISC, i-Skills are needed at every stage of the information cycle and one may have a varying level of involvement at different stages, depending on ones role. In some areas one may be required to have an expert level of i-skills. In others one will only need a working

knowledge and may depend on other colleagues for specialist help. The table below gives some scenarios of where and how i-skills might be used.

Identify/assess information need:

Planning any new information-related work – a presentation, report or other publication – requires identifying and assessing information needs.

Locate/retrieve:

Information can be found in many places, and there are efficient ways to both find and retrieve it - maybe on a website, or via a search engine.

Assess/evaluate:

The learner should have the skills necessary to evaluate information from the web as opposed to traditional academic or business sources.

Adapt/create/use:

One must know how to display information effectively, in the most relevant way, and using a range of media, including electronic.

Organise:

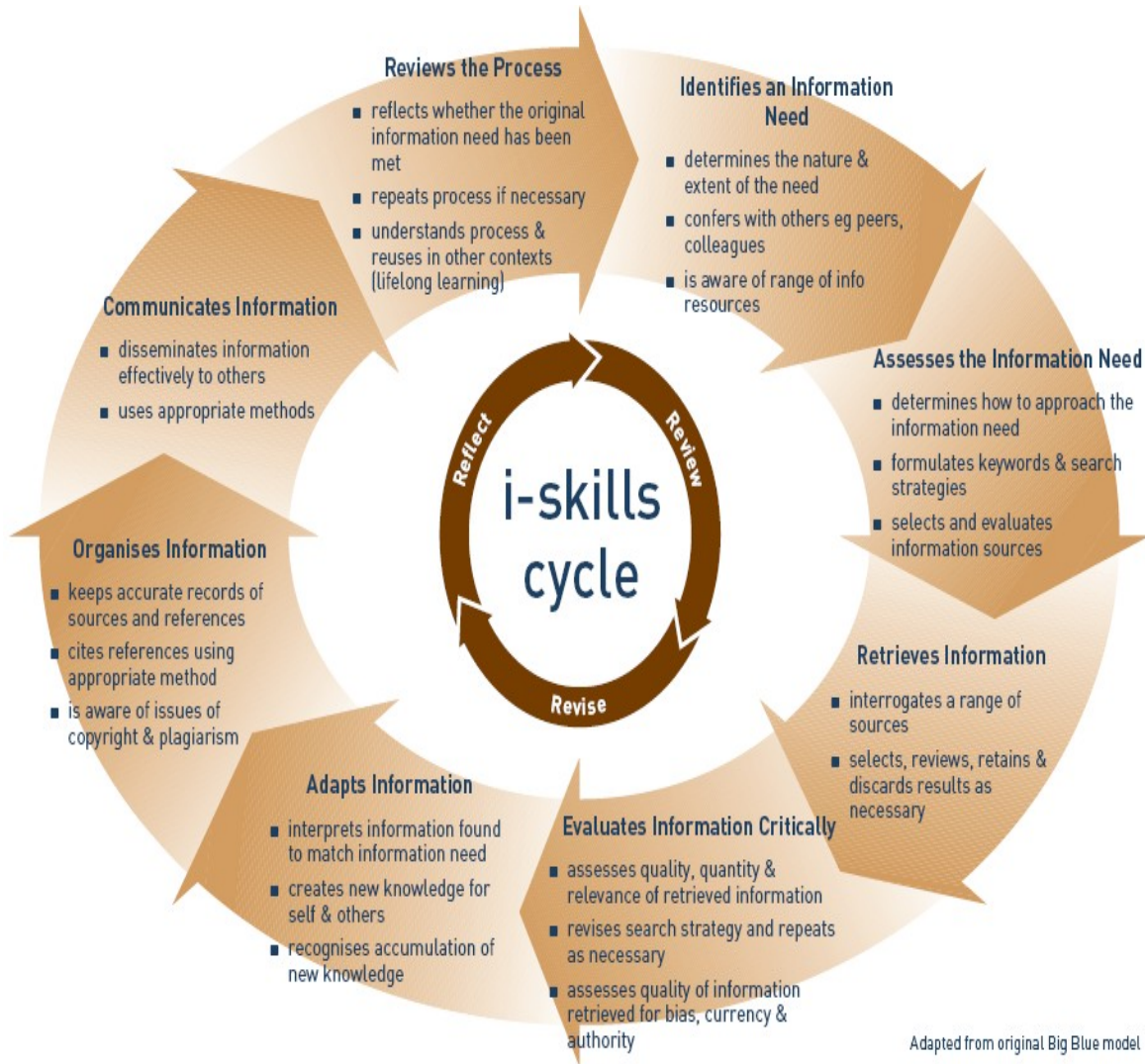
know how to reference sources (citing) and manipulate data. Organization of data and information for future use.

Communicate:

It deals with presentation skills verbally, in print form and in electronic environment. Ability to adapt the presentation to suit another environment. The students should be able to upload information onto a Virtual Learning Environment (VLE) for dissemination or sharing of information.

Reflect/review:

As with all processes, the last step is to review and reflect on the outcomes, the effectiveness and efficiency of the process, and whether any improvements or additional information are needed.



Information Literacy Standards:

The Association of College Research Library (ACRL) has given five IL standards:

1. Know = The information literate student determines the nature and extent of the information needed.
2. Access = The information literate student accesses needed information effectively and efficiently.
3. Evaluate = The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

4. Use = The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. Ethical / Legal = The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. This standard recognizes that students must be taught the social, economic and political issues surrounding information, specifically the ethical and legal uses of information and its technology.

Information Literacy and Libraries: Are we Ready?

The role of libraries in empowering the information literacy campaign is rooted in the concepts of library instruction and bibliographic instruction. Libraries and librarians as information literacy change agents. Information literacy is important beyond the domain of libraries and librarianship. Therefore librarians can serve as change agents to help other domains develop and put their information literacy policies, programs and projects in place. In this context the librarian can serve as an expert consultant and should not hesitate in offering his/her services in other domains. For example, in a private enterprise context, information literacy/lifelong learning is important to the entire company, not just to librarians and other information professionals. Librarians should play a consultative role to help other departments and units within the enterprise develop their own information literacy programs. The same goes for government agencies at all levels. Big or small, every library has an IL role. Regardless of its size and resources, the library has the important role as part of an institutional information literacy program, if not the precursor of the IL change. Librarians and other information specialist should be promoters of information literacy programs and activities because their library or information center is

- Repository of knowledge
- Information reservoir in multiple formats
- Center with librarians who are information experts
- Department with learning spaces
- Place for interaction with learning peers and teams

- Space for knowledge socialization
- Place with information advisers / reference specialists and consultants
- Center with computer access, processing and communication of knowledge
- Gateway to the Internet, a world of information

In context to Public Libraries the terms "life skills", "lifelong learning" etc. are used very frequently. Public libraries are primarily reader-driven as it is based on the information and cultural requirements of the general public. This has a number of challenges for developing information literacy programmes for users, which need to be considered when deciding approaches to information literacy. Some of the challenges are enlisted below:

- Diverse information needs
- Heterogeneous user groups.
- Attitudes to learning are very diverse.
- Different learning levels.

Information competencies are a key factor in lifelong learning. They are the first step in achieving educational goals. The development of such competencies should take place throughout citizens' lives, especially during their educational years, where librarians, as a part of the learning community and, as experts in information management, have or should assume the key role of facilitating information literacy. Through the creation, with faculty, of curriculum-integrated programs, librarians should actively contribute to the students' learning processes in their search to enhance or develop the skills, knowledge and values needed to become lifelong learners.

Information Literacy and LIS Schools:

As professional educators schools of LIS education have opportunities to: diagnose the existing range of learners' information literacy experiences, deepen those experiences with which they are familiar, encourage them to explore previously unfamiliar experiences apply the skills learned on on workplace, study and everyday life contexts. The curricula followed at LIS schools should embrace the full range of conceptions across an entire program of study . The schools must understand that IL is not teaching a set of skills but rather a process that

should transform both learning and the culture of communities for the better through the process of constructive alignment. An IL programme implemented in the curriculum must include resources to facilitate the learning of specific skills, eg web based information skills enhancement packages, other point of need, or self paced instruction, it should provide the opportunity to learn specific skills, either early in a course or at point of need, (from self-paced packages, peers, lecturers, librarians), should necessitate engagement in learning activities that require ongoing interaction with the information environment and finally the curriculum should provide opportunities for reflection and documentation of learning about effective information practices.

Conclusion:

I would like to conclude my paper with the observations made by the JISC Communications Team. It has mentioned in their document titled, “Improving Staff i-Skills: An introductory guide” that an institution with good i-skills will manage information efficiently and effectively, communicate appropriately internally and externally, keep individuals up to date with new technologies, use information and technology for better organization of their work and time and use i-skills and associated processes as a vehicle to improve quality. It has also warned us in case we don't understand and take initiation in this direction. The document clearly mentions that an institution with poor or patchy i-skills is likely to duplicate effort, miss important information, suffer from confused communication or misunderstood requirements, instructions and/or criteria, have a poor understanding of own and others' roles in information processing, demonstrate a lack of awareness or understanding of their role in helping to achieve good communication and keeping up to date with information and have 'no time' to spend on keeping up with new ideas or attending training. Its high time that libraries start participating in the IL campaign to empower their users to remain visible and significant contributor in the evolving information society.

REFERENCES:

1. American Library Association. Presidential Committee on Information Literacy.

- (1989) Final Report. Chicago: American Library Association.
<http://www.ala.org/ala/acrl/acrlpubs/whitepapers/presidential.htm>
2. Armstrong, C,et al. (2005) "CILIP defines Information Literacy for the UK." *Library and information update*, 4 (1), 22-25.
<http://www.cilip.org.uk/publications/updatemagazine/archive/archive2005/janfeb/armstrong.htm>
 3. Association of College and Research Libraries (ACRL). (2006). *Information Literacy Competency Standards for Higher Education*. Chicago: American Library Association.
<http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm>
 4. Bawden, David. (2001) "Information and digital literacies: a review of concepts." *Journal of Documentation*57 (2), 218-259.
 5. Patricia Breivik. (2000). Foreword, *Information Literacy Around the World*, edited by Bruce, C and Candy P. Charles Sturt University
 6. The Big Blue (2001) *The Big Blue: information skills for students*.
<http://www.library.mmu.ac.uk/bigblue/> JISC-funded project researching information skills training for students.
 7. Bruce, Christine. (1997a) *The seven faces of information literacy*. Adelaide: Auslib Press.
 8. Bruce, Christine. (1997b) *Seven faces of information literacy in higher education*. Brisbane: Queensland University of Technology. <http://sky.fit.qut.edu.au/~bruce/inflit/faces/faces1.htm>
 9. Bruce, Christine. (1999). "Workplace experiences of information literacy". *International journal of information management*, 19 (1), 33-47.
 10. Bruce, Christine and Candy Phil (2000). "People, Politics and Potential, in *Information Literacy Around the World*", Charles SturtUniPress, Riverina.
 11. Bruce, Christine (2002). "Information literacy as a catalyst for educational change: a background paper". White paper prepared for UNESCO, the US NCLIS and National Forum for Information Literacy. <<http://www.nclis.gov/libinter/>>

12. Carbo, Toni. (1997) Mediacy: knowledge and skills to navigate the information superhighway, in Infoethics Conference: Monte Carlo, Monaco: 10-12 March 1997. Paris: UNESCO.
13. Dicky Maidment-Otlet and the JISC Communications Team. (2005). Improving Staff i-Skills: An introductory guide. UK
14. Doyle, Christina. (1992) Outcome measures for information literacy within the national education goals of 1990: final report of the National Forum on Information Literacy. Summary of findings. Washington, DC: US Department of Education. (ERIC document no; ED 351033). http://eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/23/4a/12.pdf
15. Eisenberg, Michael B. and Berkowitz, Robert E. (2001) The Big6 information problem-solving approach. Richmond Beach: Big6. <http://www.big6.com/>
16. Ferguson, Brian. Information Literacy: A Primer for Teachers, Librarians, and other Informed People
17. IFLA. (2006). Guidelines on Information Literacy for Lifelong Learning
18. Lenox, M. F. and Walker, M.L. (1993) Information literacy in the educational process. The Educational Forum. 57 (2), 312-324.
19. Plotnick, Eric. (1999) Information literacy: ERIC Digest. Educational Resources Information Centre, 1999. (ERIC document no; ED427777). <http://www.ericdigests.org/1999-4/information.htm>
20. Rader, Hannelore. (1999) "The learning environment: then, now and later: 30 years of teaching information skills." Reference services review. 27 (3), 219-224.
21. Rader, Hannelore. (2000) "A silver anniversary: 25 years of reviewing the literature related to user instruction." Reference services review, 28 (3), 290-296.
22. Society of College, National and University Libraries (SCONUL). (1999) Information skills in higher education: a SCONUL Position Paper. London: SCONUL.
23. SCONUL. The Seven Pillars of Higher Education. London: SCONUL, 2001
24. This proposes a 'seven pillar' model for information literacy. <http://www.sconul.ac.uk/>

activities/inf_lit/papers/Seven_pillars.html

25. Shapiro, Jeremy J. and Hughes, Shelley K. (1996) Information Literacy as a Liberal Art: Enlightenment proposals for a new curriculum. *Educom review*. 31 (2), 31-35. <http://www.educause.edu/pub/er/review/reviewArticles/31231.html>
26. Stern, Caroline (2002). "Information literacy unplugged: teaching information literacy without technology". White paper prepared for UNESCO, the US NCLIS and National Forum for Information Literacy. <<http://www.nclis.gov/libinter/>>
27. Town, Stephen. (2001) "Performance measurement of information skills education: what's important?" *SCONUL newsletter*, (22), 21-23.
28. Webber, S., Boon, S. and Johnston, B. (2005) A comparison of UK academics' conceptions of information literacy in two disciplines: English and Marketing. *Library and information research*, 29 (93), 4-15.